

ORNITHOLOGY.—*Bird bones from old Eskimo ruins in Alaska.*¹

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In the past few years several valuable lots of Alaskan avian bones have come to the United States National Museum as a by-product of explorations and excavations by members of the Divisions of Anthropology and Ethnology. For convenience in publication and reference, the reports on these collections have been combined into one paper, but each is treated separately herein.

It has been argued at times that bird bones found in old Eskimo habitations are not reliable faunal records as they might have been brought there from quite far off by visiting Eskimos. This, however, is largely negated by the sedentary habits of almost all the present tribes and village groups of these people.

Not only do these bones (which total hundreds of individual specimens) reveal a little of the "third-dimension" of avian geography, that is, the time duration of present local distribution, but they also yield a number of interesting distributional records, as well as supplying information on the diet of the Eskimos in prehistoric times.

ANCIENT BIRD BONES FROM AMAKNAK ISLAND, ALEUTIAN ISLANDS

The bones reported on below were collected by Mr. Henry B. Collins, Jr., Assistant Curator of Ethnology of the United States National Museum from three ancient Eskimo village sites on Amaknak Island. The exact age of the sites (and therefore of the bones) is not determinable, but according to Mr. Collins their antiquity is very considerable, probably over a thousand years. The village sites are designated by their relative positions—West, East, and Southwest.

Amaknak Island is a small island in Unalaska Bay near the entrance of Captain's Bay, in the northeastern part of Unalaska Island, in the central part of the Aleutian chain. It has a port, Dutch Harbor, where the ships bound for Unalaska generally call, but it has not figured in ornithological literature under its own name to any extent, practically all bird records from there having been recorded merely as "Unalaska Island."

The bones include identifiable remains of 21 species. The majority of these are well known members of the Aleutian, or even Unalaskan, avifauna; two, the yellow-billed loon and the long-tailed jaeger, are of interest as geographic records. Of the bones collected, those in

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sufficiently good condition to be useful as specimens have been retained in the national collections, the fragmentary specimens (unless of interest as records) have not been kept in all cases. An annotated list of the species follows.

GAVIA ADAMSI (Gray) Yellow-billed Loon

The yellow-billed loon is represented by a metacarpal and a tarsometatarsus found in the diggings in the East Village. This species appears to be new to Unalaska Island.

GAVIA STELLATA (Pontoppidan) Red-throated Loon
Two fragmentary humeri were found at the East Village.

DIOMEDEA ALBATRUS Pallas Short-tailed Albatross

A coracoid from the South West Village site (two to three feet down from the surface), and several fragmentary humeri from the East Village (surface down to six feet below) represent this albatross.

PUFFINUS TENUIROSTRIS (Temminck) Slender-billed Shearwater

The slender-billed shearwater is represented by a coracoid found in the surface diggings at South West Village.

PHALACROCORAX PELAGICUS PELAGICUS Pallas Pelagic Cormorant

Two humeri and a fragmentary tarsometatarsus from East Village, a coracoid from West Village, and several humeri and a tibiotarsus from South West Village (surface to three feet deep) reveal the presence of this cormorant on Amaknak Island.

ANSER ALBIFRONS subsp. White-fronted Goose

The white-front goose (probably *gambeli*) is represented by a broken humerus found in the superficial diggings at East Village.

CLANGULA HYEMALIS (Linnaeus) Old-Squaw
One humerus of the old squaw was found at West Village.

HISTRIONICUS HISTRIONICUS PACIFICUS Brooks
Western Harlequin Duck

The western harlequin duck is represented by a humerus from the superficial layer at South West Village, and by another from the deepest layer (four to six feet) at East Village.

SOMATERIA V-NIGRA Gray Pacific Eider

The Pacific eider is represented by bones from three village sites—a tibiotarsus from West Village, a broken tarsometatarsus from South West Village (layer two to three feet deep), and by fragments from East Village (layer three to four feet deep).

SOMATERIA SPECTABILIS (Linnaeus) King Eider

Four fragmentary coacoids from East Village, an ulna from South West Village (superficial layer), and a humerus from the deepest layer (four to six feet) from North East Village belong to this species and indicate the relative commonness of the king eider at Amaknak.

MELANITTA DEGLANDI (Bonaparte) White-winged Scoter

The white-winged scoter is represented by a broken humerus from West Village, four humeri from East Village, and two humeri from the superficial layer of North East Village.

OIDEMIA AMERICANA Swainson American Scoter

A tarsometatarsus from the middle layer (three to four feet deep) from East Village is of this species.

HALIAEETUS LEUCOCEPHALUS ALASCANUS Townsend
Northern Bald Eagle

A broken humerus and a tarsometatarsus from South West Village belong to the Northern bald eagle.

STERCORARIUS PARASITICUS (Linnaeus) Parasitic Jaeger

The parasitic jaeger is represented by a humerus and a tarsometatarsus from East Village, and by a broken tibiotarsus from the deepest layer (four to six feet) from East Village.

STERCORARIUS LONGICAUDUS Vieillot Long-tailed Jaeger

The long-tailed jaeger is represented by five pairs of humeri and one tarsometatarsus from East Village, two humeri and three fragmentary tarsometatarsi from South West Village (surface to three feet deep), and by six humeri (two pair plus two) from West Village.

LARUS HYPERBOREUS Gunnerus Glaucous Gull

A humerus from East Village and a mandible from the middle layer (three to four feet) from East Village represent the glaucous gull.

LARUS GLAUDESCENS Naumann Glaucous-winged Gull

The glaucous-winged gull is represented by a fragmentary humerus from the lowest layer (four to six feet) from East Village.

URIA AALGE CALIFORNICA (Bryant) California Murre

The California murre is listed here on the basis of two humeri from South West Village (two to three feet deep), and a piece of a skull, a humerus, and some fragments from the two lower layers (three to six feet deep) from East Village. This species is very similar to the next osteologically and a number of bones have been considered unidentifiable and are omitted from this report.

URIA LOMVIA ARRA (Pallas) Pallas's Murre

The Pallas's murre is represented by two broken humeri from West Village, a coracoid, two humeri, two femurs, two fragmentary pairs of clavicles, and three ulnae from South West Village (superficial layer), and by nine humeri and three ulnae from East Village. If Salomonsen's new form *inornata*² be recognized, these bones would have to be considered as of that race, a course that I consider not unlikely.

CEPPHUS COLUMBA Pallas Pigeon Guillemot

A few fragments of pigeon guillemot bones were found in the superficial layer at South West Village.

LUNDA CIRRHATA (Pallas) Tufted Puffin

The tufted puffin is represented by a humerus and an ulna from East Village.

BIRD BONES FROM OLD ESKIMO RUINS ON KODIAK ISLAND

The following bird bones were collected by Dr. Ales Hrdlicka, curator of Physical Anthropology, United States National Museum, in old Eskimo ruins on Kodiak Island, Alaska, during the summer of 1932. The bones are all in the collections of the Museum.

² Ibis, 1932, p. 128: St. Matthew's Island, Bering Sea.

GAVIA IMMER ELASSON Bishop Lesser Loon

One humerus of this loon was collected. The subspecific determination is made on the basis of geography.

COLYMBUS GRISEGENA HOLBOELLI (Reinhardt) Holboell's Grebe

This species is represented by a single humerus.

DIOMEDEA ALBATRUS Pallas Short-tailed Albatross

A tarsometatarsus represents this species in the present collection.

FULMAREUS GLACIALIS RODGERSI Cassin Pacific Fulmar

One fractured skull of this bird was unearthed.

PHALACROCORAX CARBO SINENSIS (Shaw and Nodder)
Chinese Cormorant

A humerus of this species (subspecies by virtue of geography) is the most surprising discovery in this collection. It comprises not only a great eastern extension of range of this cormorant, but also the first record for the form in North America.

PHALACROCORAX PELAGICUS PELAGICUS Pallas Pelagic Cormorant

The pelagic cormorant is represented by five good and two fragmentary humeri, two ulnae, and one tibiotarsus.

ANSER ALBIFRONS ALBIFRONS (Scopoli) White-fronted Goose

The white-fronted goose is represented by a single humerus in almost perfect condition.

CHEN ROSSI (Cassin) Ross's Goose

A fragmentary skull exactly matches one of this species. This bird appears to be new to the avifauna of Kodiak Island.

CLANGULA HYEMALIS (Linnaeus) Old-squaw

One sternum of this form was collected.

SOMATERIA V-NIGRA Gray Pacific Eider

A single coracoid and two skulls of this eider were collected.

SOMATERIA SPECTABILIS (Linnaeus) King Eider

A humerus and seven skulls of this bird were brought back by Dr. Hrdlicka.

ARCTONETTA FISCHERI (Brandt) Spectacled Eider

This duck is represented by a humerus. It is known to winter in the Aleutian chain and southward.

MELANITTA DEGLANDI (Bonaparte) White-winged Scoter

Nine humeri and three ulnae of this bird were collected.

MELANITTA PERSPICILLATA (Linnaeus) Surf Scoter

Of this species five humeri and two ulnae were found.

OIDEMIA AMERICANA Swainson American Scoter

This duck is represented by a broken skull, fifteen humeri, and two ulnae.

HALIAETUS LEUCOCEPHALUS ALASCANUS Townsend
Northern Bald Eagle

The bald eagle is one of the commonest birds of Kodiak Island, and its remains are similarly numerous. It is represented in this collection by nine skulls in various degrees of perfection, one pair of mandibles, four sterna, seven synsacra, thirteen humeri, four ulnae, two radii, five tibiotarsi, two coracoids, one clavicle, one femur, three tarsometatarsi, and twelve metacarpals.

LAGOPUS RUPESTRIS KELLOGGAE Grinnell Kellogg's Ptarmigan

A single humerus of this bird was brought back by Dr. Hrdlicka. The subspecific identification is based on Taverner's data on the distribution of the races of the rock ptarmigan (Ann. Rept. Nat. Mus. Canada 1928: 28-36).

LARUS HYPERBOREUS Gunnerus Glaucous Gull

This gull is represented by four humeri.

LARUS GLAUCESCENS Naumann Glaucous-winged Gull

Five humeri of this gull were collected.

URIA AALGE CALIFORNICA (Bryant) and URIA LOMVIA ARRA
(Pallas) California Murre and Pallas's Murre

It is unfortunate that the bones of these two murrens are not more diagnostic as both species occur on Kodiak Island. The genus is represented by four skulls, five synsacra, one pair of clavicles, one pair of maxillae, one femur, one ulna, two tibiotarsi, and twenty-three humeri. The probabilities are that the majority of the bones are of *Uria lomvia arra* as that is the commoner of the two murrens on the Island.

CEPPHUS COLUMBA Pallas Pigeon Guillemot

A single skull represents this bird in the present collection.

BUBO VIRGINIANUS ALGISTUS (Oberholser)
Saint Michael Horned Owl

Dr. Hrdlicka collected six ulnae of a great horned owl, which on geographical grounds, is probably the race *algistus*. It is rather strange that no other parts of the skeleton were found.

SURNIA ULULA CAPAROCH (Müller) American Hawk Owl

A single fragmentary skull represents this species.

CORVUS CORAX PRINCIPALIS Ridgway Northern Raven

This raven is represented by four skulls, one pair of maxillae, two humeri, and two ulnae.

CORVUS BRACHYRHYNCHUS CAURINUS Baird Northwestern Crow

A single humerus of this crow was collected.

BIRD BONES FROM CAPE DENBEIGH, NORTON SOUND

These bones were collected by Mr. H. B. Collins, Jr., from diggings of prehistoric, but probably not very ancient, Eskimo ruins at Cape Denbeigh. The great bulk of the bones are of two species of ptarmigan, *Lagopus rupestris* and *Lagopus lagopus*, both of which were obviously the chief avian items of food (and probably still are) of the local Eskimos. The next most abundant bones are those of Pallas's murre, *Uria lomvia arra*, the white winged scoter, *Melanitta deglandi*, and the Pacific and King eiders, *Somateria v-nigra* and *Somateria spectabilis*. Fifteen species in all are represented in the Cape Denbeigh material, a list of which is as follows:

<i>Gavia adamsi</i> (Gray)	Yellow-billed Loon
<i>Gavia stellata</i> (Pontoppidan)	Red-throated Loon
<i>Phalacrocorax urile</i> (Gmelin)	Red-faced Cormorant
<i>Branta canadensis minima</i> Ridgway	Cackling Goose
<i>Histrionicus histrionicus pacificus</i> Brooks	Western Harlequin Duck
<i>Somateria v-nigra</i> Gray	Pacific Eider
<i>Somateria spectabilis</i> (Linnaeus)	King Eider
<i>Melanitta deglandi</i> (Bonaparte)	White-winged Scoter
<i>Melanitta perspicillata</i> (Linnaeus)	Surf Scoter
<i>Oidemia americana</i> Swainson	American Scoter
<i>Logopus lagopus alascensis</i> Swarth	Alaska Ptarmigan
<i>Lagopus rupestris</i> subsp.	Rock Ptarmigan
<i>Uria lomvia arra</i> (Pallas)	Pallas's Murre
<i>Cephus columba</i> Pallas	Pigeon Guillemot
<i>Fratercula corniculata</i> (Naumann)	Horned Puffin

BIRD BONES FROM SEWARD PENINSULA

In 1929 Mr. H. B. Collins, Jr., excavated an old Eskimo village at Kowieruk, three miles east of Imaruk Basin, Seward Peninsula. This site was poor in bird bones but revealed fragments of three species:

<i>Gavia adamsi</i> (Gray)	Yellow-billed Loon
<i>Clangula hyemalis</i> (Linnaeus)	Old-squaw
<i>Histrionicus histrionicus pacificus</i> Brooks	Western Harlequin Duck

BIRD BONES FROM BONASILA

In the course of some diggings in an old midden at Bonasila Dr. Hrdlicka unearthed a few bird bones representing the following three species.

CYGNUS COLUMBIANUS (Ord) Whistling Swan

Two broken humeri and one femur.

BRANTA CANADENSIS MINIMA Ridgway Cackling Goose

One humerus and one femur.

MELANITTA DEGLANDI (Bonaparte) White winged Scoter

One humerus.